

NARTE'S ELECTROMAGNETIC COMPATIBILITY CERTIFICATION PROGRAM

By:
Russell V. Carstensen, P.E., NCE
NARTE Executive Director
September 18, 2002

NARTE's certification of electromagnetic compatibility (EMC) technical personnel began in 1988 to resolve a problem for the Navy Department. EMC is a derivative field. That is, EMC is not part of the fundamental body of knowledge taught at the bachelor degree level. As a consequence, there is no opportunity for a demonstrable specialization in EMC as part of degree study. Anyone holding a bachelor's degree in electrical engineering can claim expertise as an EMC engineer. Without a definitive standard against which to measure the claim there is no way to refute it. This is a fine situation for academia but an extremely poor one for industry and government.

In the late 1980s the US Government was having problems in contracting for EMC specialists because the flavor of the time was to award contracts based on lowest bid. The US Navy was concerned that it could not focus contract language narrowly enough to restrict qualified bids to those with genuine EMC expertise. They did determine that if a credential for EMC engineering or technical support existed, Navy activities (and in fact, anyone) could call for that credential as proof of competence in this very narrow specialty. The Navy then requested NARTE to be the certification agent for an EMC certification program consisting of evaluation of a combination of education and work experience, peer endorsement and examination. NARTE launched the program in 1989. NARTE's EMC certification process is accredited by the International Certification Accreditation Council (ICAC), an international organization of associations formed to objectively evaluate credentialing entities and the certification programs they offer. NARTE's EMC certification has caught on worldwide with over 260 persons certified in Japan and other countries. Over the years more than 2,000 people have gone through the NARTE certification process.

The foundation for NARTE's approach to EMC certification is the combination of education and work experience. A combination is used to overcome the situation where a practitioner has some education toward a degree but for whatever reason did not complete. This concept is consistent with state engineering registration laws, even though the field of engineering is becoming so technical as to make it very difficult to enter the field without a degree. The certification committee's concern is not whether a degree program was completed but rather, has the applicant demonstrated competence in the chosen field. NARTE requires nine years combined education and work experience for an engineer and six years for a technician. The reasoning behind this is that up to four of the years could be completion of a degree program. The remaining five years would take the candidate through at least two design/manufacturing cycles. If a person is competent, they will be able to maintain consistent employment over that period.

Peer endorsement is an opportunity for those knowledgeable of a persons work to speak (or not to) in their behalf. One could assume that candidates would only list people who would speak favorably, but it is surprising the number of references that candidly eschew a strong endorsement. NARTE staff checks out the peer endorsements for just that reason.

NARTE requires a candidate sit for an eight-hour academic examination as part of the competence determination. NARTE recognizes that as practitioners mature, their technical focus becomes narrower. Therefore, the examination is open book and structured to mirror professional practice decisions. The candidate is permitted to discard questions outside their area of expertise and still be challenged with the remaining questions. The eight-hour examination is split into two four-hour sessions. For each four-hour session, the candidate is given a booklet of 48 questions of which the candidate must discard eight because NARTE will only grade the first 40 questions encountered. Of the remaining 40, the candidate must answer 28 (70%) correctly to pass. In addition, the candidate must average 70% over the two sessions (morning and afternoon) to successfully pass the examination. Conceptually then, the candidate can tailor his or her examination to their area of expertise much like they would do in their actual professional environment.

NARTE also asks applicants to supply 10 questions with solutions as part of the certification process. The administrative staff thought it was a good way to accumulate a question base for examinations. Just like bridge tolls that seem to remain long after the bridge has been paid for, staff could see an increasing need for questions to keep ahead of the need. With time we have come to recognize that there is a greater value in the process.

NARTE wants questions from practitioners that reflect industry practice. Some of the initial submissions were, frankly, less than exciting. Later, the certification committee began to understand that writing the questions was an excellent measure of the candidates understanding of the subject matter. With that new insight staff learned to reject questions that were sub-par. The quality of questions submitted in terms of depth, presentation and accuracy reflect on the personal competence of the author and are considered as part of the certification process. The certification committee now looks more closely at questions submitted in terms of quality, currency and difficulty.

For further information NARTE's EMC certification program or to obtain application forms either go to the Internet at www.narte.org or call (toll free) 1 800-89NARTE.